

# **Tribal Air Monitoring Support Center Steering Committee Technical Needs Assessment Report And Implementation Plan**

## **Introduction**

The Tribal Air Monitoring Support (TAMS) Center was formed in 2000 through a cooperative agreement between the U.S. EPA and the Northern Arizona University (NAU) Institute for Tribal Environmental Professionals (ITEP). The mission of the TAMS Center is to develop tribal capacity to assess, understand, and prevent environmental impacts that adversely affect health, culture, and natural resources. The TAMS Center currently offers a large assortment of services and programs to tribes that are discussed below. The TAMS Center Steering Committee (SC) was formed to provide timely guidance and information to the center staff, to inform the development and maintenance of the Center, and to ensure that services reflect tribal air monitoring needs and concerns. The operation of the TAMS Center is heavily dependent on dialog with tribes, with the SC serving as a primary mechanism for this. To that end, an assessment (i.e. a survey) was undertaken in 2012 to identify the technical support needs of tribal air quality programs nationwide. This report represents the culmination of this effort.

The assessment was sent via email to tribal contacts and was available for approximately six months for response. A comprehensive list provided by ITEP included over 900 tribal contacts working in a variety of environmental fields (air, water, solid waste, etc.). Individuals on this list previously had contact with ITEP through conferences, training courses, and/or individual professional assistance (phone or in-person). The assessment questionnaire was successfully received by approximately 600 of the email addresses. Approximately 75% of the responses received were obtained from this delivery method with the remaining 25% coming from in-person input at the National Tribal Forum for Air Quality held in Fort McDowell, Arizona. The survey was advertised in the TAMS Newsletter, with a link available on the TAMS website. TAMS SC members also informed tribes within and outside their regions of the assessment.

In total, forty-six respondents participated in the assessment; results are summarized in Appendix A. As a result of the extensive effort put forth in developing this technical needs assessment and evaluating the responses which are contained within this report, the SC feels the results provide the best effort to determine tribal air quality program needs on a national scale. The SC further understands that it is an ongoing process to ensure that services provided by the TAMS Center remain relevant and useful for tribal programs. Since tribal programs nationwide almost exclusively rely on federal funding sources, the TAMS SC recognizes that providing the relevant services remains a delicate balance between support services and actual tribal implementation of the tasks and programs. The SC views the needs assessment as a tool to guide actions and bolster services of the Center.

## **TAMS Center Services**

Since its inception, the TAMS Center has accepted all tasks inherent in providing technical support to the tribes for their air monitoring projects. Current and past services include:

- Training courses
- Professional Assistance
- Equipment Loan
- Mercury Monitor Loan Program
- School Air Toxics Monitoring
- Gravimetric Laboratory Service

TAMS SC 1-16-15

- IAQ Diagnostic Equipment Loan and Technical Support

## Analysis of the Current Services

### TAMS Courses

During the 2014 Northern Arizona University (NAU) fiscal year (July 13, 2013 - June 14, 2014), the TAMS Center offered numerous training courses involving various TAMS staff members. Staff participated in classes as the primary instructor, team instructor, facilitators, and support staff. The opportunity to interact with Tribal professionals and gain an understanding of their programs, concerns, training needs and challenges is an important benefit to staff. Most courses have a Tribal co-instructor and case studies presentations.

Table B. TAMS Courses and Course Staff

Course	G. Gehring	M. Ronca-Battista	A. Luedeker	F. Farsi	C. Lee	D. Santos
<i>Air Dispersion Modeling</i>	X				X	X
<i>IAQ Diagnostic Tools for Tribal Professionals</i>	X			X	X	X
<i>Management</i>				X	X	X
<i>Permit Review</i>					X	
<i>GIS</i>	X			X	X	X
<i>IAQ Diagnostic Tools for Tribal Professionals</i>				X	X	X
<i>Air Pollution Technology</i>					X	
<i>Tribal Participation in the State Implementation Plan Process</i>				X	X	X
<i>Emissions Inventory Fundamentals (Online)</i>		X	X		X	
<i>AQS (Online)</i>		X	X			
<i>Toolbox (Online)</i>		X	X			

All TAMS courses have ITEP staff support during curriculum planning and development, instruction, logistics and planning/execution. Most concerns expressed by attendees of courses have been logistical issues, such as travel length, costs, and flight connections, while course substance has usually been favorable, based on feedback from course participants.

Acquiring feedback from course participants and tribal staff is essential to continuous maintenance and improvement of materials, instruction and relevance to tribal air program needs. Feedback and input is encouraged through a variety of mechanisms: surveys, evaluation forms, online course forums, the TAMS Center website, and through direct interactions/engagement with tribal staff and council members at conferences and forums.

### Professional Assistance

Professional Assistance (PA) projects are individual support activities provided by TAMS staff or other professionals if the TAMS Center does not have expertise in the requested area of support. PA projects can be completed on-site at tribal locations, via phone or email. Examples of projects are air quality applications using Geographical Information Systems (GIS), air pollution modeling, air quality monitoring (hardware assistance, siting, auditing, calibrations, etc.), data management/analysis, indoor

air quality, emissions inventory/TEISS, meteorological monitoring, Quality Assurance Project Plan assistance, Title V and PSD permit review, tribal air program administration, and tribal implementation plans (TIPs). A list of PA activities undertaken in the last fiscal year by TAMS Center staff is provided in Table C.

Table C. TAMS Staff PA Activity – On-Site FY14 (July13-June14)

Glenn Gehring	Melinda Ronca-Battista	Angelique Luedeker	Chris Lee	Farshid Farsi
Hopi Tribe			Moapa Paiute	Moapa Paiute
Eastern Band of Cherokee Indians				
Cortina Indian Rancehria				
Walker River Paiute/ Yerrington Paiute				
Phone PA	Phone PA	Phone PA	Phone PA	Phone PA
~ 5/wk	~ 5/wk	~ 5/wk	~ 5/month	~ 5/month

The present number of TAMS Center staff adequately meets the demand for these services. A potential future challenge is retaining and maintaining the very specialized knowledge, skills, and expertise as staff retire or leave their positions for other reasons. Ensuring that specialized skills and knowledge is retained through staff turnover is vital to the continuity, quality, and stabilization of programs and services.

### Equipment Loan Service

The TAMS Center possesses a variety of air monitoring equipment available for loan to tribes, including particulate, ozone, mercury, and volatile organic compounds (VOC) samplers, indoor air particulate monitors, and calibration equipment. Keeping equipment operational, current models in stock and certified can be challenging.

The equipment loan service is overseen by the equipment manager. Significant responsibilities include maintaining an updated list of equipment (inventory) available to the tribes and SC members, assisting the TAMS Co-Directors in identifying equipment repair and replacement needs, and performing equipment maintenance and repairs resulting in available and reliable equipment for tribal loans. The equipment manager position was vacated in 2011 and remained unfilled until 2013. The equipment loan program has been a staple/backbone of the TAMS Center since its formation, and the equipment manager remains critical to this service and its continuation. The vacancy hindered equipment maintenance and loan services, resulting in decreased service reliability. The current equipment manager has begun rebuilding the program by updating the equipment inventory and equipment status lists (e.g., in need of repair or replacement, ready to deploy), equipment maintenance, and new equipment purchases.

High priority needs of this service are to develop standard operating guidelines (SOG) for equipment and obtain funding for parts, maintenance, replacement, and inventory expansion. All equipment and parts will eventually age and need replacing. Maintaining an inventory of old and/or damaged equipment (that may no longer run properly) that can be “harvested” for spare parts (especially for hard to replace parts) could be an important resource for keeping aged, but functioning, air monitoring equipment running in communities. When manufacturers discontinue a model, spare parts become hard to find. Lack of parts may cause data reporting below the 75% threshold.

Additionally, the TAMS Center in collaboration with Jed Harrison, ORIA, will be developing policies and procedures for the Indoor Air Quality Diagnostic Equipment loan and Technical Support Program. Glenn Gehring attended the first IAQ Diagnostic Equipment course offered at the TAMS Center in November 2013 to give him knowledge of the specific equipment the TAMS Center will provide as loaner equipment.

New air monitoring technology, such as sensors, is continually developing, and as technology evolves and tribes determine how, and if, particular equipment and devices fit within their air monitoring programs, the TAMS Center will need to continually assess new technology and ensure that the equipment loan service stays relevant to tribes and their priorities.

### **Mercury Monitor Loan Program**

Mercury is a known toxic trace element. Across the U.S., mercury contamination in the past few years has reached alarming concentration levels. Accordingly, mercury has become a priority for tribes and members of the TAMS SC. Farshid Farsi has overseen the mercury monitor loan program since it began in 2008. Equipment for three sites is currently available for a 12 month loan to tribes. Original program support was provided by the Mercury Deposition Network (MDN). The MDN is the only network providing a long term record of total mercury (Hg) concentration and deposition in precipitation in the United States and Canada. All MDN sites follow standard procedures and have uniform precipitation chemistry collectors and gages. Funding for the sample analysis and the MDN technical support ended in 2013. Since the founding of this program, six tribes have participated. The equipment is still available for loan to tribes. However, funding is currently not available to cover the sample laboratory analysis and MDN technical support.

### **School Air Toxics Monitoring**

In 2010, the TAMS Center began overseeing the Tribal School Air Toxics Monitoring (TSATM) initiative. Technical support was initially provided by the TAMS former technical specialist. Technical assistance has also been provided by the Southern Ute Indian Tribe and the Nez Perce Tribe. Initially, only enough equipment to maintain two sites was available. However, EPA-OAQPS has forwarded much of the equipment used by the states for the National School Air Toxics Monitoring Initiative to the TAMS Center for use by the tribes. Therefore, enough equipment is now available to handle more than two monitoring projects at a time. ERG Laboratory provides analysis of collected samples in North Carolina and is funded through EPA-OAR. As of December 2013, three tribes, Morongo Tribe, Tohono O’odham Nation, and the Fond du Lac Tribe, were seeking to take part in the TSATM Initiative. During the fall 2014 SC in-person meeting, an application for a study on the Navajo Nation in Churchrock, NM, was reviewed and approved. Sampling periods are around 3 months.

### **Gravimetric Laboratory**

In 2002, under the guidance from the TAMS Steering Committee, the Center established a gravimetric laboratory capable of weighing filters for particulate matter (PM) analysis and offered this service to tribes. A TAMS Center Gravimetric Lab Guidance Document was created in March 2010 to address the fair and equitable use of the service which was approaching maximum capacity.

Due to funding constraints, the TAMS Center service ceased operation on September 18, 2014, and temporarily transferred service to RTI International pending acquisition of contract services.

While this service operated with two staff, the lab capacity was 4,500 filters per year (filters/yr.). In 2011, the TAMS gravimetric laboratory provided service to 17 Tribes with the laboratory output at 4,200 filters/yr. From the latter half of 2011 through early 2012, the EPA National Center for Radiation Field Operations (NCRFO), formerly the Radiation and Indoor Environments National Laboratory (RIENL), upgraded the quality system of the overall EPA facility and the TAMS gravimetric laboratory service. Through this transition period, the TAMS gravimetric laboratory service was shut down for approximately two months while a contract laboratory was secured to provide service to the tribes. The TAMS gravimetric laboratory service resumed operation in June 2012 with faster turnaround in regards to the sample filter delivery and weighing, i.e., a per-sampling event filter shipment. By comparison, the previous operation would send up to 3 to 4 sampling events in one shipment and intake sample filters on a monthly basis. When the TAMS gravimetric laboratory service resumed full operation, nine tribes rejoined the service

Six tribes are currently still utilizing the service. The tribes not returning to the service either found other gravimetric analysis resources or stopped monitoring. Towards the end of the TAMS Center Gravimetric Laboratory operation, new tribes inquired about the service. At the time, laboratory personnel indicated they could have added more tribes to the service, but the pending outsource to a contractor created uncertainty in offering a consistent service to new tribes.

Results from the Needs Assessment indicated that there is still a demand for gravimetric laboratory services for the tribal programs. Therefore, the TAMS SC recommends and supports continuation of gravimetric laboratory services and will strive to maintain this service, in addition to acknowledging and pursuing higher-ranking needs, such as continuous air monitoring, expressed by the response group.

### **Services and Actions Determined from the TAMS Technical Needs Assessment**

During the 2014 spring in-person meeting, the TAMS SC discussed the assessment results in detail and determined the following action items in response to the indicated needs. Available TAMS Center services and additional actions which address each need were determined. Needs were identified and categorized into four areas in which the TAMS SC should focus on for priority actions.

#### Focus Area 1: Continuous Ambient Air Monitoring/IAQ Diagnostic Equipment

##### 1. Continuous Ambient Air Monitoring – 31%

- a. Professional Assistance – The TAMS Center staff can meet the current demand for professional assistance (PA) for continuous air monitoring. Any increase in the request for services will overextend the capability of staff to fulfill them.

*Action Item: The TAMS Steering Committee will increase communication with the regional Tribal Air Coordinators (TACs). In order to secure a more complete picture of the number and types of equipment utilized by tribes nationwide, the TAMS Center will need to seek trends in continuous air monitor use, such as manufacturer, model, and equipment reliability (e.g., ease of repair and operation) from U.S. EPA regions.*

- b. Training- Additional classroom training is needed in the following areas:
  - Equipment – BAM1020 and other continuous air monitors. The information from the TACs on tribal air monitoring equipment from the various regions will help focus the specific equipment training needs

- Exchange Network Software and Data Acquisition Systems
- Audits
- Regional specific training, which may be addressed by mini-courses

*Action Item: Continuously update and maintain list of equipment of interest through TACs, the SC, training course evaluation comments, and discussions with tribal programs.*

## 2. Indoor Air Quality Diagnostic Equipment – 20%

- a. Equipment Loan – Currently, the TAMS Center possesses two sets of indoor air quality diagnostic equipment to address a residential home “walk-through”. Presently this equipment is only utilized for teaching. An additional set will need to be purchased to accommodate the increased proficiency of tribal programs. IAQ diagnostic instruments to address commercial buildings should also be made available through the TAMS Center.

*Action Item 1: Develop and maintain standardized forms to accompany TAMS loan equipment, e.g. SOG, QAPP.*

*Action Item 2: Identify and obtain IAQ diagnostic equipment to address commercial building environment.*

- b. Professional Assistance/Training – The TAMS center does not have dedicated personnel available for PA fulfillment. With increasing requests additional staff may be needed to fulfill the need. ITEP currently offers two IAQ training courses which emphasize inclusion of housing and health program staff in addition to environmental staff. Specific areas of expressed training needs are the following:
  - Conducting walk-through assessments
  - Collaboration with housing and health programs, schools, and other organizations (e.g., American Lung Association, local academic researchers)
  - Outreach development to communicate health effects
  - Technical expertise to support the diagnostic equipment instruments maintained by the TAMS Center
  - Additional funding for travel support from ITEP-TAMS to attend the IAQ conference

*Action Item 1: Periodically determine the applicability of IAQ training course objectives to tribal needs through course evaluation feedback, SC updates, and discussion with tribal programs*

*Action Item 2: Review current budget to determine availability of ITEP travel support funding.*

## Focus Area 2: Air Monitoring Data Reporting/Other Criteria Pollutant Air Monitoring

### 1. Air Monitoring Data Reporting – 20%

- a. Training – ITEP offers classroom, online, and other course options which include the following:
 

Classroom

  - Introduction to Tribal Air Quality
  - EPA Air Quality System (AQS) database
  - Air Quality Computations
  - Air Pollution Technology



Online

- AQS
- Emissions Inventory
- Tribal Data Toolbox

Other

- Vendor training offered on an individual basis or as mini courses, with limited travel funding available from ITEP
- Regional mini-courses

*Action Item 1: Continue to evaluate classroom needs and course requests through course evaluations, SC, TACs, and tribal program contacts and research available reporting software.*

*Action Item 2: Survey data logger equipment and software used by tribal programs to determine training needs.*

- b. Professional Assistance – The TAMS Center staff have adequately provided support for data reporting thus far, but current staff is at capacity.

*Action Item: The TAMS SC suggests reaching out to other support organizations, tribal consortia, tribal environmental offices, and the EPA to assist with professional assistance for air monitoring data reporting and Air Quality System (AQS) data submittal.*

2. Other Pollutant Air Monitoring – 17%

- a. Training – The TAMS Center has readily responded to the training needs of tribes nationwide. Training courses may be needed for the new emerging sensor technologies (non-FRM), Federal Reference Method Air Monitoring for particulates (PM2.5/PM10), Ozone (O3), and Sulfur Dioxide (SO2).

*Action Item 1: Review current air quality standards and area designations, to determine whether additional course and equipment will be needed.*

*Action Item 2: Use existing mapping tools to assess and demonstrate risks and potential tribal needs related to new standards, areas not currently monitored and tribal designations.*

*Action Item 3: Survey tribes for equipment needs and interests.*

*Action Item 4: Identify and participate in special studies or pilot projects utilizing emerging technologies, air toxics, or NAAQS pollutants.*

- b. Professional Assistance (PA) – Other pollutant PA is related to continuous air monitoring PA, which is currently meeting demand. Needs determined by the SC are the following:
- Continuation of gaseous air monitoring PA support
  - Ensure TAMS Center staff members receive training and have access to equipment and support to continue providing quality service
  - Funding to provide a well-stocked TAMS Center work bench to ensure the appropriate maintenance and repair of equipment
  - Funding to support sample analysis for mercury monitoring equipment available through the TAMS Center

- Additional equipment for other air monitoring programs, such as School Air Toxics monitoring projects and lead

*Action Item:* Update the current TAMS Center equipment inventory and generate a priority list of needed equipment to meet tribal needs.

**Focus Area 3: Quality Assurance Documentation: QAPPs & SOPs/Emissions Inventory**

**1. Quality Assurance Documentation: QAPPs & SOPs – 20%**

- a. Training – The TAMS Center offers training for the ITEP developed software, TurboQAPP, which provides a template for PM quality assurance project plan (QAPP) development required by the EPA for validation of monitoring activities.
- b. Professional Assistance – The TAMS SC views QAPP support through PA as the most important support mechanism for this need. Support for other pollutants and IAQ QAPP development is needed.

*Action Item 1:* Review the current IAQ QAPP/SOP assistance needs to determine a strategy for support.

*Action Item 2:* Continue discussion with Mike Papp, EPA-OAQPS, to determine options for consistency/standardization of QAPP technical guidance between the regions.

**2. Emissions Inventory – 15%**

- a. Training – The current ITEP Emissions Inventory classroom training has been redesigned as a set of comprehensive online courses. The results have been very good, as course participants of the EI-Fundamentals course have completed Level 4 emissions inventories. EI-Advanced provides instruction for Level 3 and higher emissions inventories.
- b. Professional Assistance – PA support provided by ITEP-TAMS has been very strong by providing technical support with the Tribal Emission Inventory Software Solution program, QA of data and EIS data submittal

*Action Item:* Expand awareness of course options and PA through regional TACs.

Table D. Summary of Priority Needs and Action Items

<b>Focus Area</b>	<b>Support Need</b>	<b>Action Items</b>
1.1 Continuous Ambient Air Monitoring	1. Professional Assistance 2. Training	Survey equipment use, speak with TACs
1.2 IAQ Diagnostic Equipment	1. Equipment Loan 2. PA/Training	Develop support documents for equipment use, e.g. QAPP, SOP, quickstart guide. Research IAQ equipment for commercial bldg.
2.1 Air Monitoring Data Reporting	1. Training 2. Professional Assistance	Research reporting software trends. Survey datalogging equipment and software utilized by tribes. Follow the exchange network.
2.2 Other Criteria Pollutant Air Monitoring	1. Training 2. Professional Assistance	Review current designations and determine need to revise standard. Survey equipment utilized by tribes. Identify and participate in pilot studies and other air monitoring projects. TAMS will update, refurbish, or



		purchase new equipment.
3.1 QA Documentation: QAPPs & SOPs	1. Training 2. Professional Assistance	Review IAQ QAPP/SOP assistance needs. Work with Mike Papp to push for technical guidance consistency between regions.
3.2 Emissions Inventory	1. Training 2. Professional Assistance	Work with regions to facilitate more direct support from regions.

### Summary of Implementation Plan and Process

Major action items include: on-going surveying of tribes for needs, increased communication with the regional Tribal Air Coordinators, and continuous review of ambient and indoor air monitoring equipment trends. Although response to the needs assessment was low, ITEP and TAMS continuously receive tribal concerns through course evaluations, the National Tribal Forum discussions, and Steering Committee member input. In order to expand access to tribal needs, the SC will utilize the TACs as a resource for tribal inquiries and contact. Through these various avenues of tribal contact, the TAMS Center will receive data on types of equipment utilized and loan equipment needed for temporary use by tribal air monitoring programs to effectively evaluate both ambient and indoor air quality.

Steps will be taken to address all action items during the 2015 federal fiscal year, with progress updates provided during monthly TAMS SC calls and biannual in-person meetings. Periodic review of focus areas will occur as changes arise in tribal needs or with shifts in priorities from regional updates. This Plan should be viewed as a “living document” which will be reviewed and updated as needed to reflect changing tribal priorities and needs. It is recommended that a formal needs assessment survey is sent out at least every five years in order to reflect developments and changes in tribal priorities. It is possible that utilizing additional or alternative distribution methods, such as the National Tribal Forum or an online survey, may increase the response rate.

### Staff

In order to understand how the TAMS Center functions, identification of the current staff and their present workloads is provided.

Table A. Current Staff & Workload

Staff	Responsibility	FTE
Farshid Farsi, Co-Director, TAMS-EPA	Manage TAMS Activity Training Course Support Professional Assistance	1.0
Christopher Lee, Co-Director, TAMS-ITEP	Manage TAMS Activity Training Course Support Professional Assistance	1.0
Darlene Santos, Administrative Associate, TAMS-ITEP	Administrative Support for Training Courses and Staff	.80
Glenn Gehring, Technology Specialist III, TAMS-ITEP	Professional Assistance Equipment Support Training Course Support	1.0
Angelique Luedeker, Technology Specialist II, TAMS-ITEP	Professional Assistance Training Course Support	1.0

Melinda Ronca-Battista, Research Specialist, TAMS-ITEP	Professional Assistance Training Course Support	1.0
Daniel Ruehle, Equipment Manager, TAMS-NOWCC	Equipment Support	1.0

**The Steering Committee for the Tribal Air Monitoring Support Center approved this document by consensus on January 21, 2015.**

## Appendix A – Need Assessment Results

Total Responses: 46

Total # of Respondents who receive Federal Air Quality Funding: 44

*Will your tribe be requiring gravimetric laboratory service?*

Yes- 17

No- 14

Do Not Know-15

*Will you be monitoring for NAAQS comparison?*

Yes- 29

No- 9

Do Not Know- 8

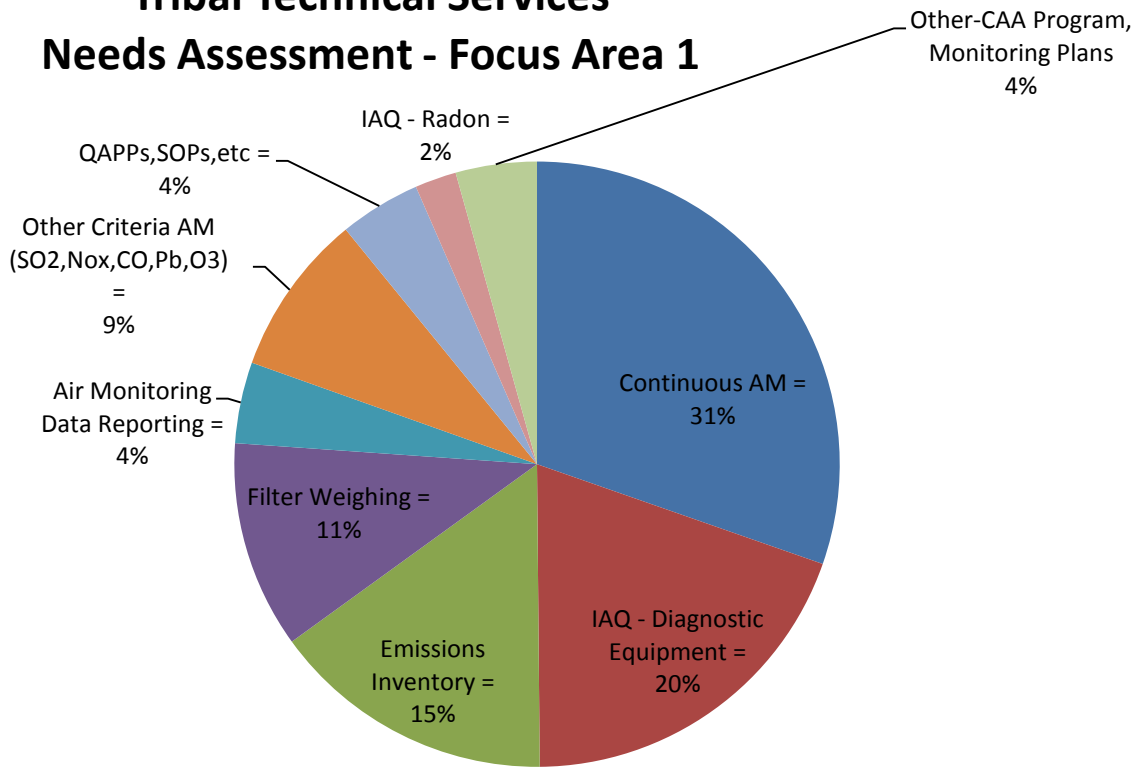
*Focus Area choices listed in the Needs Assessment:*

- Continuous Particulate Matter Monitoring Instruments
- Filter Weighing Service
- Indoor Air Quality Diagnostic Equipment
- Quality Assurance Project Plans Standard Operating Procedures
- Emissions Inventory
- Indoor Air Quality Radon Canisters
- Air Monitoring Data Reporting
- Other Criteria Pollutant Ambient Air Monitoring Instruments
- Other (Tribal professional provided a space to suggest other focus area)

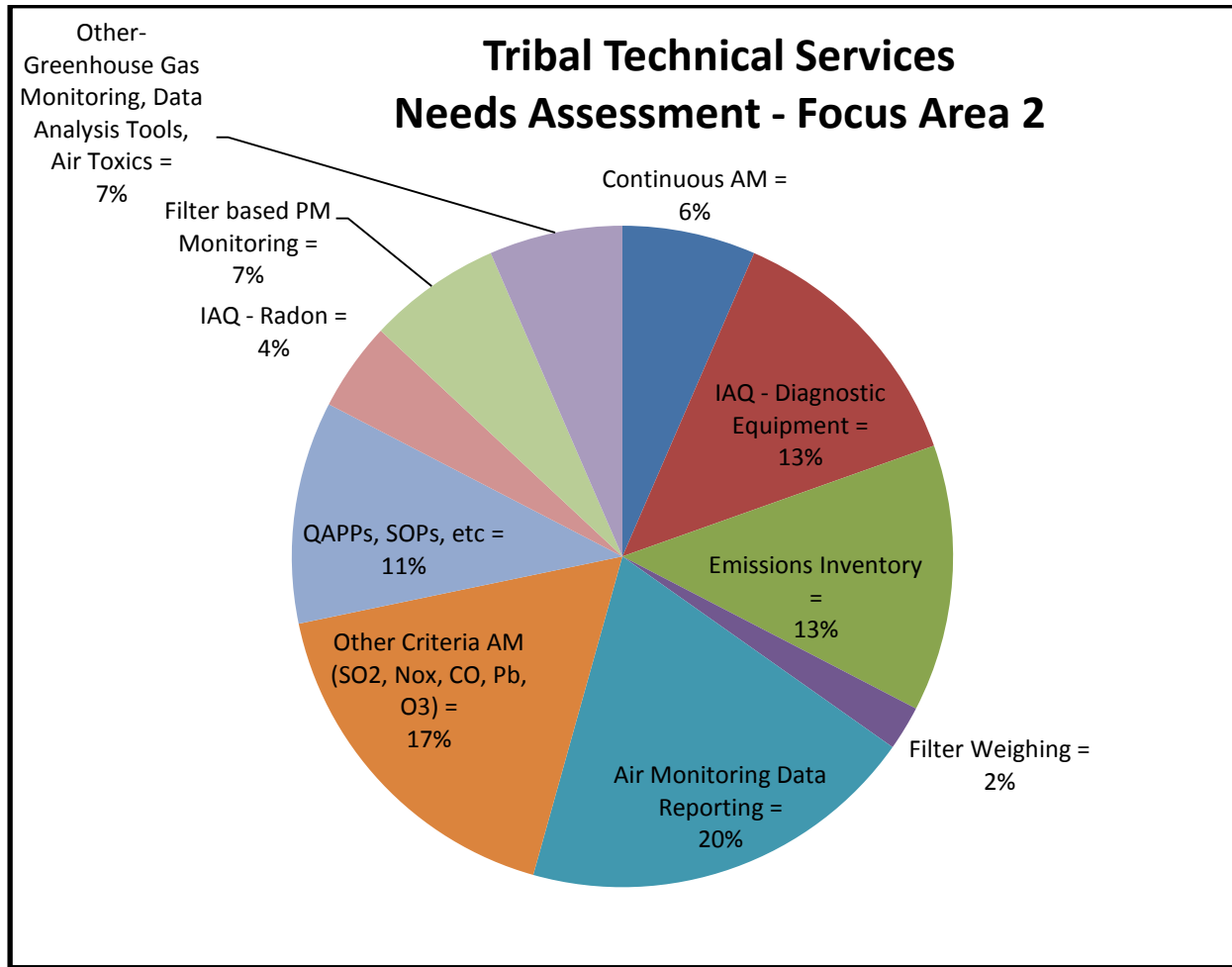
### **Needs Assessment Results: Top 3 Focus Areas**

Focus Area 1

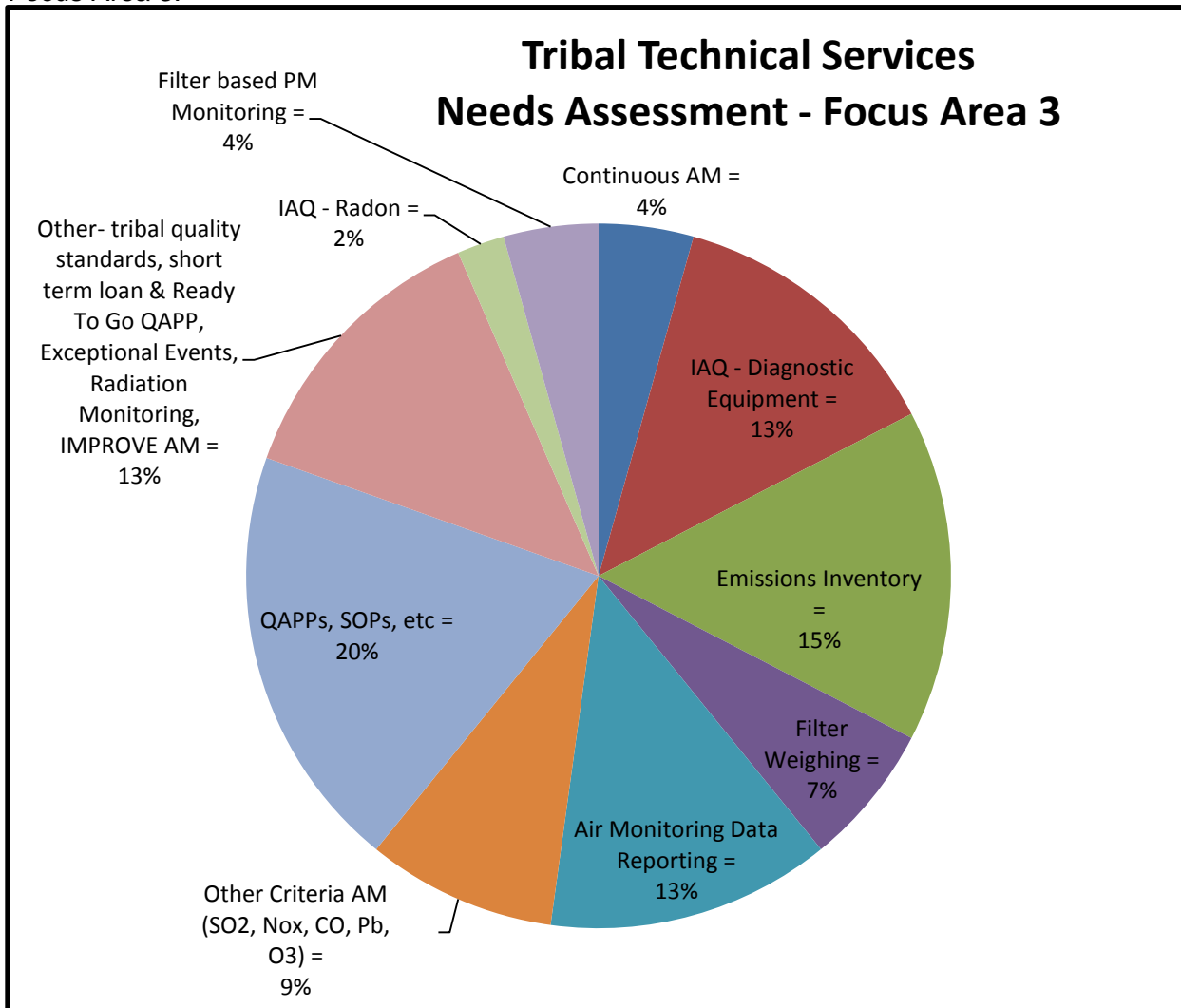
### Tribal Technical Services Needs Assessment - Focus Area 1



Focus Area 2



Focus Area 3.



Other Suggestions and Comments for Focus Areas, as entered into the TAMS Needs Assessment:

- Ideas and methods for data analysis to convey the results to the membership and council
- It would be great to have a meteorology class. I took one through TAMS years ago and it has really helped to track the movement of PM-10 in my area
- Outdoor burning regulation and permitting
- How to address wood stove pollution and quantifying emissions
- Wildfires smoke emissions and health effects
- Extensive knowledge of Emissions Inventory to further my air program and to better my knowledge to benefit my tribe
- More knowledge to assist my tribe to write a more effective and correct QAPP in the different levels of understanding
- Being able to identify the proper use of AQS to be addressed in EI and QAPP to benefit my tribe in future air programs as needed
- Although ITCA is assisting me with EI, I would appreciate more EI training to sharpen my skills
- I would like to retake Tribal Data Toolbox to refresh, same with AQS course
- I always appreciate assistance when it comes to TEOM operation and maintenance, especially on calibration and audits

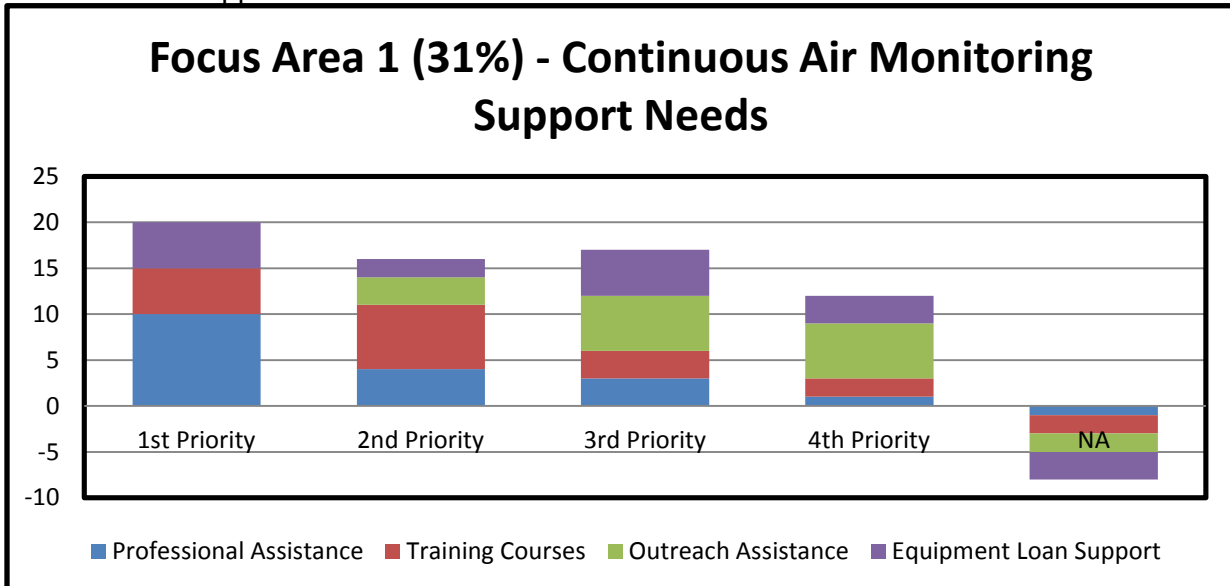


- Monitoring equipment
- With the collaboration with the TAMS Center, we will have quality PM10 data for the Tohono O'odham Nation
- At this time we have gotten some preliminary indoor air training but we have been getting compliant of indoor related issues in tribal offices, homes, etc., so we hope to have a program that can assess and have some mitigation strategy
- That we will have qualitative PM10 data in AQS
- IMPROVE/visibility monitoring
- Radiation monitoring/radiation protection
- Still use MiniVols for PM10 monitoring
- Recent filter based monitor purchase, availability of weighing analysis would be helpful for cost
- Need a more comprehensive EI with an IPP and repeatable analysis
- Perhaps loaning of NOx or SO2 monitor to see baseline
- And also radon canisters. IAQ sampling equipment that can be borrowed on a short term basis to identify a problem. (And associated ready-to-go QAPPs)
- Ambient air toxics sampling equipment that can be borrowed on a short term basis to identify a problem (And associated ready-to-go QAPPs)
- Ambient NAAQS equipment that can be borrowed on a short term basis to identify a problem (And associated ready-to-go QAPPs)
- Climate change and greenhouse gas monitoring
- Energy efficiency and weatherization connected to indoor air quality pollutants
- CLEAN AIR ACT programs: NAAQS driven programs, FRM/FEM monitors, data management requirements under CFR 50 & 58, Network Reviews
- Data analysis tools: AQS Discovery, QA/QC software, statistical analyses that will be used for reporting or outreach
- Exceptional Events
- Monitoring plan
- AERMOD and CALPUFF
- Other criteria ambient air monitoring
- Continuous particulate monitoring
- Air monitoring data reporting (AQS)

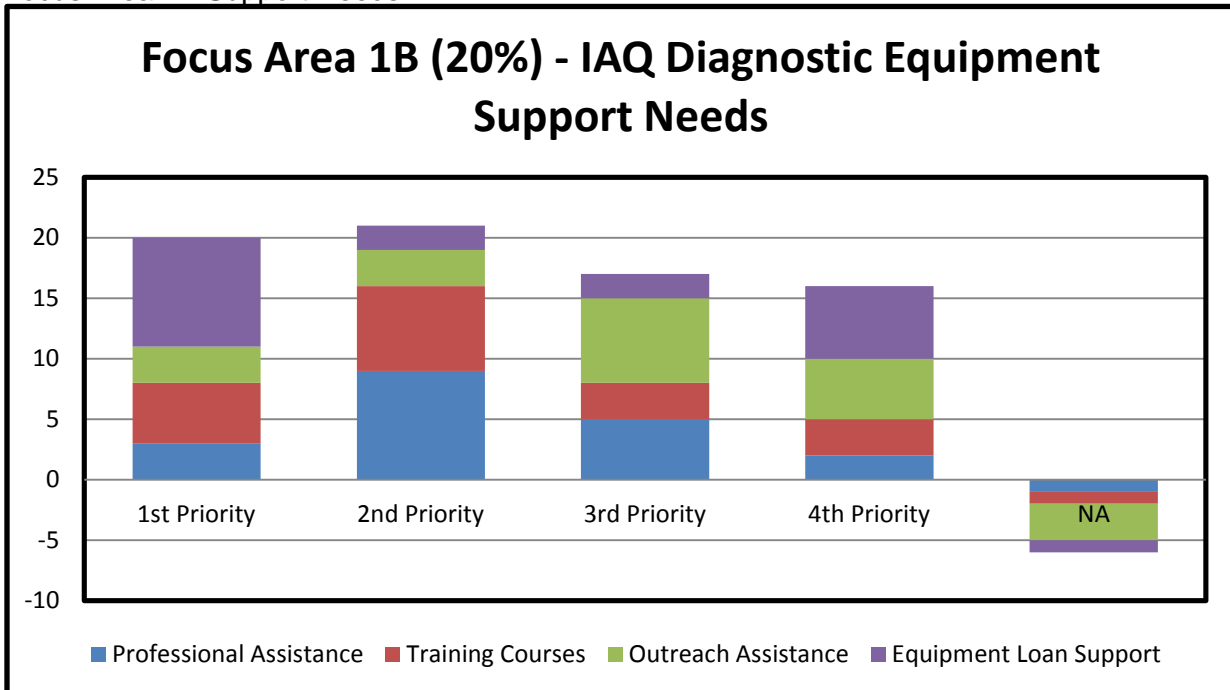
### **Support Needs**

The top two focus areas from Focus Area 1, Focus Area 2 and Focus Area 3 were graphed according to the specific support needs inputted. Responses that included an "x" in a specific support need were also included in the graph as an "NA" column.

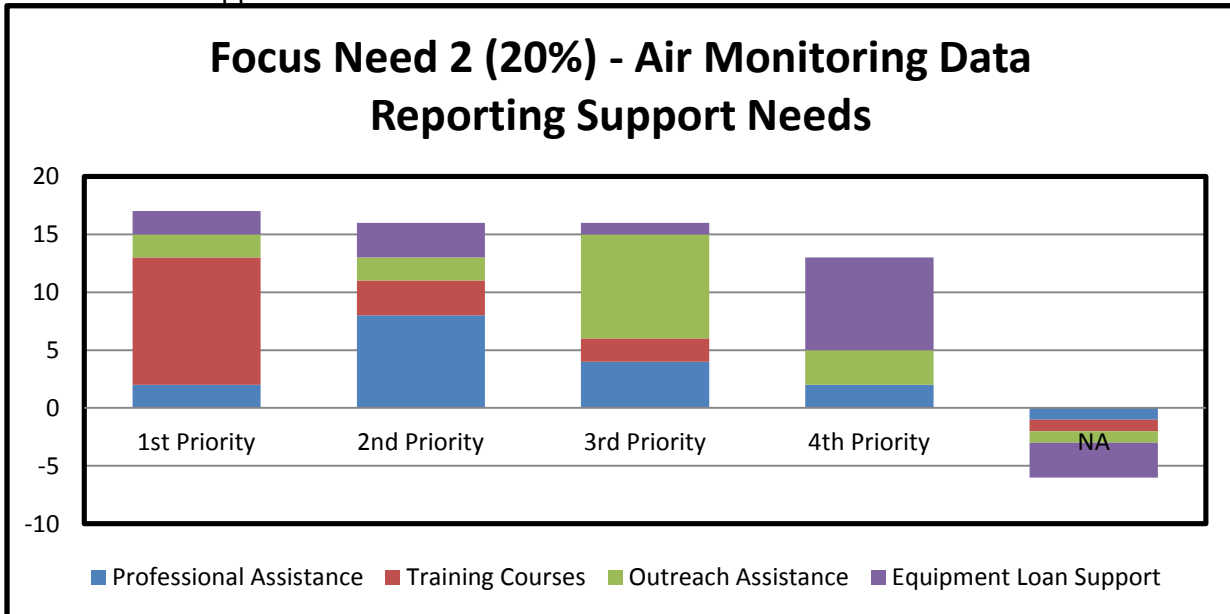
Focus Area 1 Support Needs:



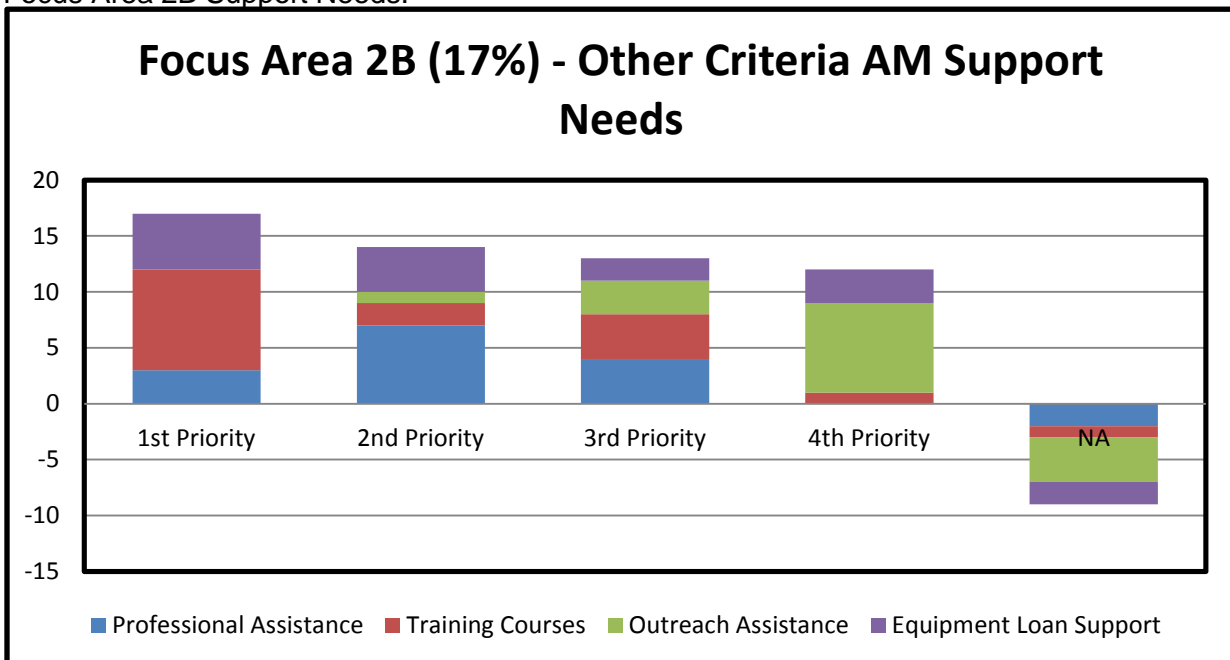
Focus Area 1B Support Needs:



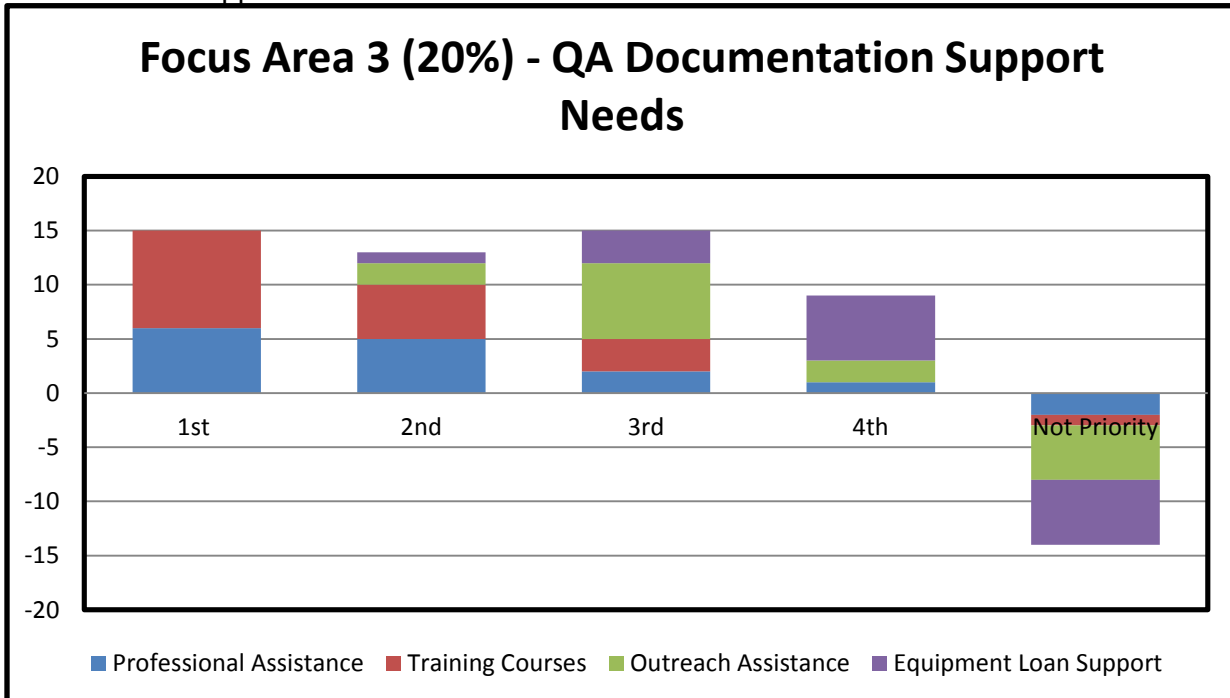
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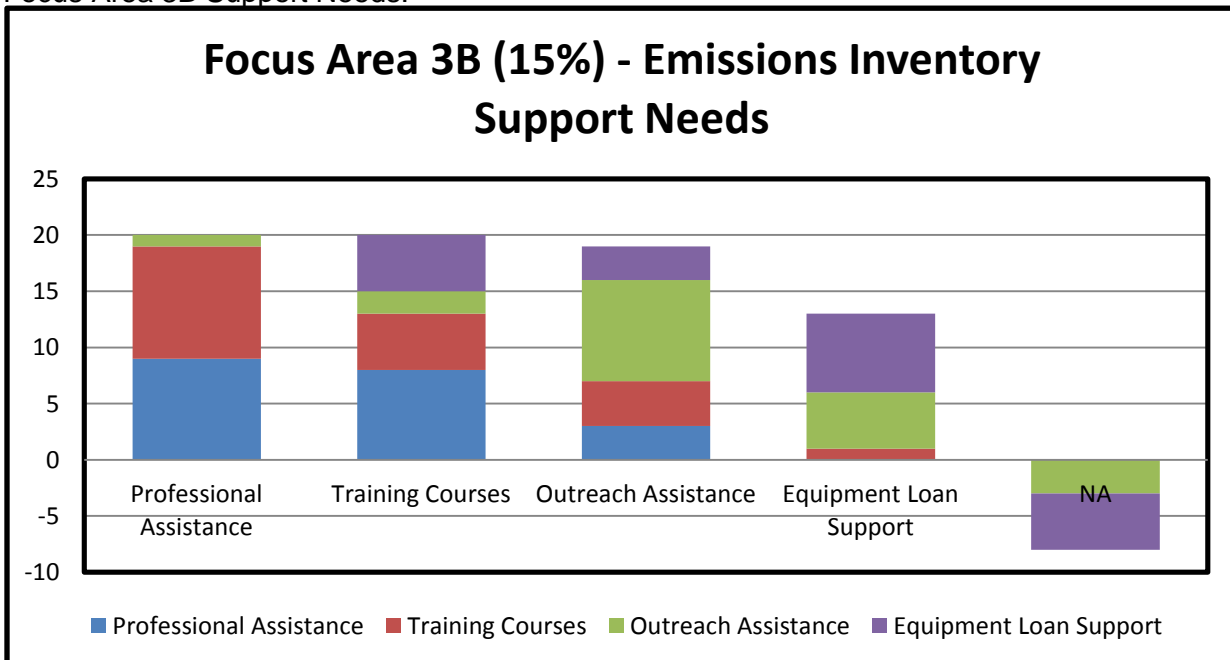
Focus Area 2B Support Needs:



Focus Area 3 Support Needs:



Focus Area 3B Support Needs:



Other Support Needs as inputted into the TAMS Needs Assessment:

- CONTINUOUS PARTICULATE MATTER AIR MONITORING: It would be helpful to know if other tribes are having any particular monitoring issues with specific instruments (such as the BAM 1020), or if they are performing any detailed data analysis above and beyond what is required.
- EMISSION INVENTORY: this EI is (kind of) complicated for me to catch on; I think more classroom teaching is helpful.

- FILTER WEIGHING SERVICE: Lab services needed.
- OTHER: Monitoring plan
- OTHER CRITERIA POLLUTANTS: EPA is offering webinars to review current AQS changes, but tribes may need more one-on-one assistance to meet the new data submittal requirements (such as utilizing the ENSC).
- AIR MONITORING DATA REPORTING: even though I (am) familiar with Toolbox and AQS, It would be nice just to refresh
- EMISSIONS INVENTORY: Have Air Specialist proficient in TEISS and all aspects of an EI to have reproducible results.
- QA DOCUMENTATION: Our focus has been on ambient air monitoring, but we would like to learn more about indoor air monitoring and what other tribes are doing, and if they have seen positive results.
- CONTINUOUS PARTICULATE MATTER AIR MONITORING: keep up with the latest technical operation.
- FILTER WEIGHING SERVICE: need training in data management and data logging